

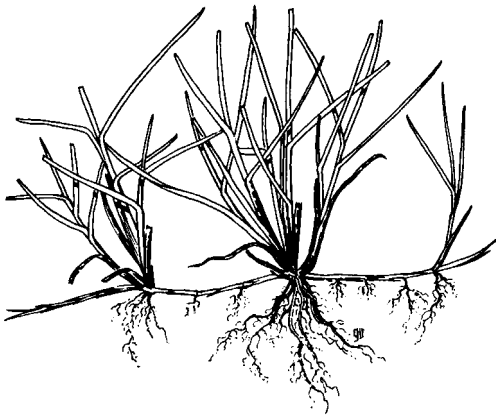
# PLANT & PEST ADVISORY

LANDSCAPE, NURSERY & TURF EDITION \$1.50

JUNE 4, 1998

## Diseases of Turfgrass

Bruce B. Clarke, Ph.D., Turfgrass Pathology



### Anthracnose

This disease, caused by the fungus *Colletotrichum graminicola*, is apparent on annual bluegrass, fine fescue, perennial ryegrass, and Kentucky bluegrass at this time. The fungus typically attacks turf growing under low soil fertility and/or heat and drought stress. Low cutting height can also enhance symptom development. To identify **anthracnose** in the field, look for small black fruiting bodies with protruding black spines. For best results, increase turf vigor with light applications of nitrogen, maintain adequate irrigation, reduce thatch, and raise the cutting height (when possible). In areas that have had a previous history of anthracnose, apply Banner, Bayleton, Cleary 3336, Daconil, Heritage, Manicure, Rubigan, Sentinel, or Thalonil on a preventive basis, per manufacturer's recommendations. Once the disease develops, good results have been obtained with a tank mix of Bayleton 25DF (2 oz/1000 ft<sup>2</sup>) + Daconil 2787 4F (10 to 12 fl oz/1000 ft<sup>2</sup>) or Cleary 3336 50W (4 to 6 oz/1000 ft<sup>2</sup>) + Daconil 2787 4F (10 to 12 fl oz./1000 ft<sup>2</sup>).

### Brown Patch

Begin preventive control measures *now* to suppress this destructive summertime disease caused by the fungus *Rhizoctonia solani*. For best results, avoid heavy applications of nitrogen fertilizers during hot, humid weather, water in the early morning hours (12 midnight to 8 AM), and apply Banner, Chipco 26019, Cleary 3336, Curalan, Daconil, Eagle, Fungo, Heritage, mancozeb, Manicure, Prostar, Sentinel, Thalonil, or Touche, on a preventive basis in areas with a previous history of brown patch.

### Dollar Spot

This disease, caused by the fungus *Sclerotinia homoeocarpa*, has been very active on greens and tees. To prevent **dollar spot** from causing damage on susceptible turf again this year, maintain adequate nitrogen fertility, water in the early morning hours, reduce thatch, avoid the sole use of any fungicide for prolonged periods of time (to reduce the possibility of fungicide resistance), and apply Banner, Bayleton, Chipco 26019, Curalan, Daconil, Eagle, mancozeb, Manicure, Rubigan, Sentinel, Thalonil, Touche, or Vorlan per manufacturer's recommendations. Repeat fungicide applications as needed through mid-October.

SEE TURFGRASS DISEASE ON PAGE 2

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# Plant Diagnostic Lab Highlights

Richard Buckley, Coordinator, Plant Diagnostic Lab

## Turfgrass

The laboratory continued to receive **Yellow patch** samples at a relatively rapid pace into late-May. Golf course turf from Bergen, Camden, Cape May, and Monmouth Counties were diagnosed with the disease. Golf courses from Pennsylvania and New York were also represented in the sample load. The other cool-season disease common on turf in early-May, **pink snow mold** has ceased to be a problem now that the weather is becoming more summer-like. **Take-all patch** is active at this time. The disease was found on bentgrass samples from Hunterdon and Somerset Counties.

On landscape turf, **necrotic ring spot** was diagnosed on Kentucky bluegrass submitted from Monmouth County, and **ascochyta leaf blight** was identified on other Kentucky bluegrass samples from Camden and Monmouth Counties.

## Landscape

**Shade tree anthracnose** was the primary tree disease problem in the laboratory through the end of May. The disease was diagnosed on ash from Gloucester, Middlesex, and Passaic Counties, Maple from Somerset County, and oak from Union, Salem, Atlantic, and Somerset Counties. All of the oak samples were chestnut oak, and all of the trees also had considerable **leafhopper** injury on the leaves. Other leaf spot diseases on shade trees sent to the laboratory this period include **apple scab** from Atlantic County and **marssonina leaf spot** on maple from Somerset County. **Eriophyid mites** on the leaves of shade trees have also been very active this spring. Samples diagnosed with **maple bladder gall mite** were sent from Middlesex County, **pearleaf blister mite** was identified on pear from Morris County, and **bud gall mites** were found on birch from Somerset County. **Phytophthora root and crown rot** is already killing junipers in a Union County landscape planting and **phoma leaf and twig blight** was diagnosed on holly from Atlantic County.

## Nursery and Greenhouse

**Powdery mildew** was identified on begonia from a Middlesex County greenhouse and farm stand operation. The same grower also had problems with rust on his dracaena. In Passaic County, a similar operation had **alternaria leaf spot** in the zinnia that was being grown for cut flowers. □

# Herbicide Options for Landscape Weed Control

Albert O. Ayeni, Ph.D., Weed Science

The tables on the next page are to guide landscape maintainers in the selection of herbicides for weed control in landscape plantings. The ultimate choice depends on the landscape plantings under consideration, weed types, and the maintainer's circumstances. For best results seek additional advice from your Rutgers Cooperative Extension County Agent and follow herbicide label.

**Note: The trade names listed are for easy identification only. No endorsement is intended nor is discrimination against other trade names with the same active ingredient(s) implied.**

SEE TABLES A AND B ON PAGE 3

## Twilight Fruit, Vegetable & Flower Meeting

Tuesday, June 30, 1998

5:30 p.m.

Demarest Farm, Hillsdale, NJ

### Speaker & Topic

- Dr. Bob Belding, Spec/Tree Fruit Pomology, "Tree Fruit Culture & Management to avoid pest problems"
- Dean Polk, IPM Agent - Fruit, "Fruit IPM Update"
- Dr. Peter Shearer, Spec/Fruit Entomology, "Tree Fruit Pests & their Control"
- Dr. George Wulster, Specialist in Floriculture, "Flower Crop Pests & their Control"
- Dr. Steve Johnston, Spec/Plant Pathology, "Vegetable Diseases & Management"
- Carmen Valentin, DEP Public Outreach Representative, "DEP Update"

Recertification credits will be offered in  
CORE & PP2

Also...Hayride Tour of Demarest Farm  
Rain or Shine!

Call Joel Flagler of Rutgers Cooperative Extension of Bergen County at (201) 599-6167 for information or directions, or call Demarest Farm at (201) 666-0472.

TURFGRASS DISEASE FROM PAGE 1

### Powdery Mildew

This disease has been identified on landscape turf recently. In most cases, **powdery mildew** occurs in shaded areas and on lawns with poor air circulation. Although control is usually not required, present infections may be checked with Banner, Bayleton, Eagle, Rubigan, or Sentinel, if desired. □

### a) Preemergence Herbicides

Herbicide		Use Site			
Common Name	Trade Name(s)	Tree & Shrub Beds	Ground Cover Beds	Herbaceous Perennial Beds	Annual Flower Beds
<b>Single Active Ingredient Products</b>					
Bensulide	BETASAN, PRESAN, BENSUMEC, etc.	Yes	Yes	No	No
Dichlobenil	CASORON, DYCLOMEC, NOROSAC	Yes	SFSS*	No	No
Isoxaben	GALLERY	Yes	Yes	Yes	SFSS
Metolachlor	PENNANT	Yes	Yes	SFSS	No
Napropamide	DEVRIKOL	Yes	Yes	Yes	Yes
Oryzalin	SURFLAN	Yes	Yes	Yes	Yes
Oxadiazon	RONSTAR	Yes	Yes	No	No
Oxyfluorfen	GOAL	Yes	SFSS	No	No
Pendimethalin	PENDULUM, PRE-M	Yes	Yes	SFSS	No
Prodiamine	FACTOR	Yes	Yes	Yes	SFSS
Pronamide	KERB	Yes	No	No	No
Simazine	PRINCEP, CALIBER 90, SIMAZINE, etc	Yes	SFSS	No	No
Trifluralin	TREFLAN, PREEN, etc	Yes	Yes	Yes	Yes
<b>Commercial Mixtures</b>					
Isoxaben + oryzalin	SNAPSHOT DF	Yes	Yes	Yes	SFSS
Isoxaben + trifluralin	SNAPSHOT TG	Yes	Yes	Yes	SFSS
Oryzalin + benefin	XL	Yes	Yes	Yes	Yes
Oxyfluorfen + oryzalin	ROUT	Yes	Yes	No	No
Oxyfluorfen + pendimethalin	SCOTTS ORNAMENTAL HERBICIDE 2	Yes	Yes	No	No

\*SFSS = Suitable for some species only .

### b) Postemergence Herbicides

Herbicide		Use Site			
Common Name	Trade Name(s)	Tree & Shrubs	Ground Covers	Herbaceous Perennials	Annual Flowers
Clethodim	ENVOY, PRISM	Yes	Yes	Yes	Yes
Dichlobenil	CASORON, DYCLOMEC, NOROSAC	Yes	SFSS**	No	No
Diquat*	REWARD, ORTHODIQUAT	Directed	No	No	No
Fenoxaprop	ACCLAIM EXTRA	Yes	SFSS	SFSS	SFSS
Fluazifop-p-butyl	ORNAMEC, FUSILADE II	Yes	SFSS	SFSS	SFSS
Glyphosate*	ROUNDUP PRO, ROUNDUP ULTRA, KLEENUP	Directed	No	No	No
Glufosinate-ammonium*	FINALE	Directed	No	No	No
Halosulfuron	MANAGE	Directed	No	No	No
Oxyfluorfen	GOAL	SFSS	SFSS	No	No
Pelargonic acid*	SCYTHE	Directed	No	No	Directed
Pronamide	KERB	Yes	No	No	No
Sethoxydim	VANTAGE	Yes	Yes	Yes	Yes

\*This is a non-selective herbicide which must be directed at the weed. Avoid contact with the desirable landscape plantings.

\*\*SFSS = Suitable for some species only.

# Native & Ornamental Hemlocks Threatened by Hemlock Woolly Adelgid

*New Jersey Department of Agriculture, Division of Plant Industry*

The hemlock woolly adelgids, which are taking a heavy toll on native and ornamental hemlocks across the state, could also wreak havoc on the hemlocks in residential areas. The adelgids have already caused widespread decline and loss in hemlocks stands in Hunterdon, Morris, Somerset, Sussex and Warren Counties and a bumper crop of the pests is expected this year thanks to 1998's mild winter.

Hemlock woolly adelgids are aphid-like insects that suck plant juices from twigs at the base of the needles of Eastern or Canadian and Carolina hemlock. These oval, soft-bodied insects are brownish red in color and nearly invisible to the naked eye. However, a clear sign of the infestation is white cottony tufts about 1/16th inch or more in diameter easily visible at the base of the needles. What adelgids lack in size, they make up in numbers and over a five-year period they can transform a densely foliated, 100-foot hemlock into a needleless skeleton.

Homeowners with infested hemlocks can control woolly adelgids by thoroughly drenching infested trees with either a dormant oil from November through late March, when temperatures exceed 50°F, or an insecticidal soap or light horticultural oil in mid-May. If the infestation is very heavy, another treatment of oil or soap should be applied again in July. Oils and soap are contact insecticides so thorough coverage is necessary to suppress the adelgid populations. On large hemlocks, where it is difficult to obtain good coverage, an application of imidacloprid (Merit-a systemic insecticide) as a soil drench in the fall or late winter should give good control.

Treating native hemlock stands is much more difficult since many are located in ravines inaccessible to truck-mounted spraying equipment. However, the New Jersey Department of Agriculture is raising a tiny, imported predatory lady beetle, *Pseudoscymnus tsugae*, for release this spring in an effort to control the adelgids in native hemlock stands. Over 35,000 beetles will be released on state-owned lands this spring and studied to determine their success in controlling the adelgids and the predators' ability to overwinter in New Jersey.

The adelgids have been in the US since 1924 having come from Asia. In the eastern US the insect is found from the Smokey Mountains to southern New England. Severe infestations of the pest began to occur in New Jersey in the mid-1980's. □

# Diseases of Ornamentals

*Ann B. Gould, Ph.D., Ornamentals Plant Pathology*

## Nursery and landscape ornamentals

**Anthracnose of shade trees** is particularly troublesome this year on sycamore, ash, maple, oak, and walnut. Diseased leaves appear "scorched" along veins and leaf margins, and twig and branch dieback may occur on trees in poor health. Leaves infected with anthracnose are often shed by mid-summer. It is too late to spray for this disease now. If desired, some control of this disease can be obtained **next season** with foliar applications of fungicides. Refer to previous issues of this newsletter for further information.

Look for the development of **black spot** on elms infected this past spring with the black spot fungus, *Gnomonia ulmea*. It's too late to spray for this disease now; for management **next season**, apply mancozeb to emerging leaves and repeat 10 and 20 days later.

June, July, and August are the best months to look for symptoms of **Dutch elm disease** on American elms in New Jersey. Affected branches throughout the crown will rapidly turn yellow and wilt (or flag). Black streaking may be evident in the vascular tissue just beneath the bark. The most effective means of saving infected trees includes prompt removal of diseased limbs up to 10 feet behind yellowed foliage. For best results in the future, control bark beetles with dormant applications of methoxychlor, remove dead or dying elms as soon as they are noticed, and debark or burn dead wood prior to beetle emergence next spring. To prevent root graft transmission of this disease, dig a trench (3 ft. deep) midway between diseased and healthy elms, or apply Vapam per manufacturer's recommendations. In addition, valuable trees may be injected on a preventive basis with Alamo, Arbotect, or Phyton 27 as per manufacturer's recommendations. When trees exhibit more than 5% crown symptoms, fungicide injection may be ineffective.

In southern counties, check mimosa trees that have not broken bud for symptoms of **Fusarium wilt**. This disease is characterized by a dark brown to purple-colored streaking in the sapwood. Fungicides are not effective against this disease. In the future, prune dead wood during dry weather and increase tree vigor through proper fertilization and irrigation. □

Table 1. Fungicides for disease control in landscape ornamentals.<sup>1</sup>

	Anthracoze	Dogwood anthracnose	Botrytis blight	Damping off & root rot (water molds)	Damping off & root rot (non water molds)	Downy mildews	Leaf and Twig Blight	Phytophthora dieback	Leaf spot and Needlecast	Petal blight	Powdery mildew	Rust	Scab	Black spot of rose
<b>Inorganics</b>														
Copper (Champ, Kocide, Phyton 27)	X		X				X	X	X		X		X	X
<b>Aromatic hydrocarbons</b>				X						X				
etriziazole (Truban, Terrazole)										X				
PCNB (Terraclor)			X		X									
<b>Benzimidazoles</b>							X							
benomyl (Benlate, Tersan 1991)														
thiabendazole (Merctect, Arbotect)	X													
thiophanate-methyl (Cleary 3336, Fungo, Domain)	X		X	X	X		X	X	X	X	X		X	X
<b>Carbamates</b>														
mancozeb, maneb (Dithane, Fore, Protect T/O)	X	X	X	X	X		X	X	X	X		X	X	X
propamocarb hydrochloride (Banol)				X										
Ziram									X	X	X	X		X
<b>Sterol Inhibitors</b>														
fenarimol (Rubigan)											X	X	X	
myclobutanil (Systhane)										X	X	X		
propiconazole (Banner, Alamo)	X	X					X		X		X	X	X	
triadimefon (Bayleton, Strike)										X	X	X		
triforine (Funginex, Triforine)											X	X		X
<b>Dicarboximides</b>														
iprodione (Chipco 26019)			X		X		X		X					
vinclozolin (Ornalin, Curalan)			X							X				
<b>Nitriles</b>														
chlorothalonil (Bravo, Daconil, Thalonal)	X	X	X				X	X	X	X	X	X	X	X
<b>Phenylamides</b>														
metalaxyl (Subdue)				X				X						
<b>Phosphonates</b>														
fosetyl-AI (Aliette, Prodigy)				X				X						
<b>Combination products</b>														
thiophanate-methyl + chlorothalonil (ConSyst)			X							X		X	X	X
thiophanate-methyl + etridiazole (Banrot)				X	X									
thiophanate-methyl + iprodione (Benefit)			X	X	X		X		X		X			
thiophanate-methyl + mancozeb (Zyban, Duosan)	X		X			X	X		X	X	X	X	X	X

<sup>1</sup>No endorsement of named products is intended, nor is criticism implied of similar products that are not mentioned. Read the label before applying any pesticide. Adapted from Table 22, Fungicide Disease Applications on Nursery Plants. 1986. Page 104 *in*: Diseases of Woody Ornamental Plants and Their Control in Nurseries, R. K. Jones and R. C. Lambe, eds. North Carolina State University.

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**Use of Trade Names:** Trade names are used in this publication with the understanding that no discrimination is intended and no endorsement is implied. In some instances a compound may be sold under different trade names, which may vary as to label clearances.